AGRICULTURAL DEPARTMENT.

J. P. STELLE, EDITOR.

[illegible] NOTICE—All communications intended for this department should be addressed to Prof. J. P. Stelle, Fort Worth, Tex.

"WHAT ARE WE TO DO?"

A wide spread teaching of the times sets forth that farming can no longer be made to pay, and that the trouble is plainly traceable to rings and monopolies working di[illegible] against every interest of the agricult[illegible]. "What are we to do?" asks the [illegible] who has been credulously taking in [illegible] of this new school of discour[illegible]. The Virginia state department of agri[illegible], attaching sufficient importance [illegible] to justify the act, has printed [illegible] in explanation of what the farmer [illegible] do. The bulletin states that the [illegible] to be done by the farmer is to [illegible] of what he is doing. Compara[illegible] farmers really know what they [illegible], owing to a lack of clearly under[illegible] every detail in their business, and [illegible] exact accounts of all transactions. [illegible] knew what they were doing they [illegible] probably be entirely able to see that [illegible] and monopolies are cutting a less fig[illegible] the case than is popularly supposed. [illegible] of business can be a success for [illegible] length of time unless conducted [illegible] business principles. It is foolish[illegible] fold our arms and proclaim that [illegible] sells below the cost of produc[illegible] because we don't happen to make ends [illegible] each case. Far better to reflect [illegible] produced more on the market [illegible] cost of production with every[illegible]. Somebody can produce it with [illegible] its production would entirely [illegible] that there is, everybody knows, [illegible] profit in some crops than in [illegible] according to circumstances; and it [illegible] for the farmer to make a [illegible]. Let him not waste his ener[illegible] to make profitable what his [illegible] suited for.

[illegible] decided what our land is best [illegible] produce, the next thing is to [illegible] have, if possible, all that we [illegible] the best quality. If we have to [illegible] much less of it. Here comes the [illegible] for observation and study. How [illegible] farmer make and put up for market a [illegible] of any kind if he does not [illegible] a home product when he sees it?

[illegible] a really good thing has been pro[illegible] will always be a market for it. [illegible] has been advantageously produced [illegible] will be profitable. This then [illegible] points out two things necessary to do [illegible] farming a success. Learn what is [illegible] to make up a prime article and [illegible] how to produce that article at [illegible] possible expense. In other words [illegible] produce as cheaply as any other [illegible] can produce. When the article has [illegible] cheaply produced there will no [illegible] any excuse for complaining [illegible] the market. The ruling figures give [illegible] some one—if they do not give as [illegible] the fault lies in a lack of cheap [illegible].

[illegible] covers grounds taken by us [illegible] article on the subject of so-[illegible] production." The thing for [illegible] study is cheaper production. [illegible] large numbers of farmers are [illegible] cheaper than others those [illegible] often find their products selling [illegible] figures. The cheaper pro[illegible] the fellow who rules the market [illegible] and any movement to prevent [illegible] otherwise than prove fruitless.

[illegible] Virginia Bulletin further states that [illegible] next thing for the farmer to understand [illegible]. To enable him to do this he [illegible] keep up with the market quotations. [illegible] never do to sell on what some buyer [illegible] product is ruling at—he must [illegible] what it is ruling at, and he must also [illegible] where the market taking goods [illegible] figures is to be found. This is [illegible] and properly belongs to farming [illegible] anything else.

[illegible] are here tempted to break off on [illegible] paragraph of our own. How is the [illegible] know all this unless he takes and [illegible] a paper giving full market [illegible]. To enable him to get the requi[illegible] in this line it will be neces[illegible] to take some large daily paper [illegible] his region of country, or, if he [illegible] cannot afford the cost of the [illegible] weekly made up from such [illegible] weekly of this character con[illegible] market reports for the week, and [illegible] to be one running a well con[illegible] department it simply [illegible] two papers in one, and at the cost [illegible] agricultural paper and a [illegible] commercial paper. Full commer[illegible] local and by telegraph, are very [illegible], hence the ordinary agricultural [illegible] afford to buy and publish [illegible] weekly made up from some [illegible] has an advantage over the mere [illegible] matter. The costly reports [illegible] for the daily edition, which is [illegible] them, and from this they are [illegible] transferred to the weekly edition [illegible] further expense to the publishers. [illegible] the Fort Worth Gazette, for instance, [illegible] matter in that paper costs [illegible] every week than is paid out for all the [illegible] appearing in any one of the so-called [illegible] agricultural weekly papers pub[illegible] within the United States, hence those [illegible] papers cannot afford the additional [illegible] buying and publishing it, for [illegible] any of them are doing more than [illegible] ends meet as it is. The patron of [illegible] Weekly Gazette gets the very cream of [illegible] coming of that immense outlay, [illegible] patrons tell us they get, addition[illegible] live and strictly applicable agri[illegible] literature than they get in any [illegible] publication, to say nothing of an im[illegible] amount of good reading in other [illegible]. But, of course, one must not blow [illegible] horn.

[illegible] Virginia Bulletin goes on to state [illegible] farmer will make money and get [illegible] while his neighbor, whose crops are [illegible] good enough, will be getting [illegible] every year. Here opens a field for [illegible]. If this failing to make farming pay [illegible] to rings and monopolies, as the agri[illegible] literature charlatans and the polit[illegible] demagogues claim, how is it that the [illegible] of those rings and monopolies do not affect all farmers alike? A careful study [illegible] be very apt to reveal the fact that the advantages or disadvantages lie di[illegible] at home. One farmer counts the cost of production and upon [illegible] produces only such crops as must [illegible] him a fair per cent at the lowest known selling figures. In counting up these costs he takes everything into consideration and figures for a lessening of cost here and a lessening of cost there. The items of gain in these respects may be comparatively small, but if there happens to be a good many of them they may be made to foot up to considerable at the end.

There never was anything more simple than this. We will suppose that you are proposing to raise a crop of cotton. You will say one 500-pound bale of cotton at 8 cents a pound would bring me in $40. Now let me see if I can make any profits on it at figures so low—the lowest figures at which there is any kind of probability of its ever selling. You then take into account every item of cost necessary to the production of a bale of cotton and getting it ready for market, not forgetting to consider any possible natural adverses that might ordinarily present themselves. If the figures show that you can make nothing on the cotton, you work over the items again to see if some reduction in cost cannot be made. If you find this not possible, you drop the cotton and figure on some other character of crop. When you have decided on the crop that you will pitch, you keep your figures before you and work up to them to the letter, and as a consequence you cannot help making money.

The other farmer—the one who cannot make farming pay—concludes to raise a crop of cotton, and pitches in without having made any previous estimate of costs. He plows and plants, and hires extra hands to "chop out." The worms come and he then makes his arrangements for poisoning them, if he concludes to interfere with them at all. When "picking time" comes on he hires Tom, Dick and Harry to pick cotton at so much per hundred, with no previous knowledge of what outlay per bale this service is going to involve. He gins, bales and hauls to market on the same blind and reckless plan, and ten chances to one, unless cotton happens to rule high, he winds up by coming out at the little end of the horn, and then wastes a month or so among his friends, in town or somewhere else, cursing rings and monopolies.

This whole thing is nothing more nor less than a simple matter of business. You engage to raise a crop of cotton expecting to realize so much per pound for it. The thing is exactly on a par with putting in a bid on building a bridge or any other character of structure. The contractor figures all the costs before putting in his bids. What would you think of the contractor who would bind himself to build the bridge without having first figured on what the performance would cost him?

Farming pays if you make it pay, but if you run it blindly and entirely by chance you will be apt to find it about as uncertain as would be any other line of business driven on the same plan.

DOES FARMING PAY?

"No," answers the man who is endeavoring to work the farming masses into a frenzy with a view to thereby feather his own personal nest. "Yes," says a correspondent of the Country Gentleman, "good farming pays every time. In farming, as in everything else of our present times, it is simply a survival of the fittest." The correspondent then goes on to state that some men may make a failure, and many only a bare living, but others acquire a competence. Some merchants fail, many make a living, a few acquire wealth. Many lawyers fail, some make a mere living, a few become wealthy. So it is in all the trades and professions.

Education, intelligence, perseverence and business ability will win every time, and these are just as useful and of just as much advantage to the farmer as to the tradesman or professional man.

This correspondent says he recently came from a section of Wisconsin which in his early boyhood—twenty years ago—was literally a "howling wilderness." To-day the forests have disappeared; so have the primitive log houses and stables. In their places are neatly-painted farmhouses, great barns and stables, sleek looking cattle and broad fields of grain over which the farmer at harvest time drives his fine team and twine binder, and at night looks over an extent of ten to twelve acres covered with rich shocks of grain which in the morning was uncut. Yet he grumbles and says "farming doesn't pay." It is the popular refrain, and he finds himself in duty bound to sing the same song being sung by the majority. His conscience may smite him a little as he does it, but he joins in all the same. How do the facts sustain him in the act? Twenty years ago he was not worth $500, perhaps not $100. To-day he is worth $5000, $10,000, or more, according to his ability.

So it is with hundreds of farmers the writer knows. They began life with little or nothing a few years ago. To-day they have a competence. How much larger percentage of merchants, lawyers, doctors or manufacturers have done as well? Of the hundreds of thousands of prosperous farmers all over the country, but a small percentage commenced with capital enough to start a one-horse corner grocery. Every one of the broad fields, happy homes, neat cottages, spacious barns and well kept herds of our country enter a standing protest against this oft repeated lie—"farming doesn't pay."

There are fewer individual failures among farmers than among the people engaged in any other calling. When did you ever hear of a regular farmer who had made an assignment and turned his property over to a receiver for the benefit of his creditors, as is being done constantly, more or less, by business men in almost every town or city? You may have heard of such a thing, but when? Is it a common occurrence as in the other case? If not, and yet farming don't pay, why not? One has but to go abroad in the farming regions to get himself convinced that good farming does pay in the aggregate, just the same as a walk along the business streets of a city will convince him that correctly managed trade pays. It is only an adherence to correct business principles, and an employment of correct management, that pays in any case. Who can, with any show of reason, say this is not the true way to look at the question.

This senseless wail over a failure of farming to pay is hurting the country more than anything else that could be sprung. It engenders discouragement and prevents the putting forth of due effort. It retards rural immigration. Say, for instance, a farmer of Iowa, or Wisconsin, or Michigan reads in some local organ that farming don't pay in Texas and that, therefore the Texas farmers should unite in some movement to force it to pay. He says, I am managing to make a living where I am, and therefore I had best let well enough alone rather than change to a region where the living I would get, if I got it at all, must depend upon something else other than the direct results of my labor. So he don't come, and thus misrepresentation cuts us out of a good citizen while, at the same time, it cuts him out of a competency.

Good farming pays in Texas, and pays handsomely—bad farming don't pay anywhere. If you are a good farmer come here and you will get rich off your own exertions—if you are a bad farmer you had as well stay where you are, for one place will answer your purpose as well as another.

CHEAPER PRODUCTION.

Farm and Ranch of Dallas appears to be in line with us in our advocacy of cheaper production for the farmer rather than reduced production. That paper for May 15 intimates that the only hope for the cotton planter lies in cheaper production. There is little foundation upon which to build hopes that the next crop will command higher figures than did the last—there is a chance that the figures will run lower. The crop of last season reached about 8,000,000 bales; that of the present season will probably go to 9,000,000 bales. It is folly to try to govern the selling price by a reduction of the crop. The best that can be done is to urge farmers to raise their cotton crops on fewer acres, by a better system of cultivation, by the use of labor-saving implements, and consequently at less cost. In the meantime it is proper to counsel them to produce a sufficiency of such home supplies as will save cash outlay, and even bring in some actual cash occasionally. Farmers will "catch on after awhile," and the best system will develop itself by slow steps, but surely. The great attractiveness of cotton is the fact that it is always salable for cash down, whether the price is remunerative or not. Other farm products require more or less business skill to market them profitably—cotton requires none. This business fact is the one thing needful, and we should labor to develop it. In the meantime cotton will remain king of cultivated crops, bringing into the South every year $350,000,000 in hard cash for the lint alone. To reduce the cost of production is the problem that should engage the attention of the farmer.

TEXAS FOR SEED RAISING.

In a recent address delivered before an assemblage of horticulturists Mr. J. J. H. Gregory, the noted Marblehead, Mass., seedsman and gardener, said: "Seeds ripened in a dry season are always best and keep vitality longest." If Mr. Gregory does not well understand this thing one may safely take the position that no man does, and it strikes us that there is, in this statement of his, something for Texans to ponder over. We can grow most seeds here fully as successfully as they could be grown anywhere else, and the season of their ripening would almost invariably be a dry season. This last, then, means that our seeds would always class entirely up to seeds of the very best quality, retaining their vitality longer than the seeds of most other sections. The seeds of other sections may be all right in this particular and then, again, they may not—just as it happens as to seasons of ripening. With Texas that peculiar condition so advantageous would be a sure thing for every year. There is big money to the producer in the seed-growing business. Why not, then, have large seed farms in Texas like they have in Canada and other sections where the conditions favoring best quality of seeds are never so certain as they would be here? When it was fully known that all our seeds were produced under the most favorable conditions that could exist Texas seeds would attain to such a reputation as would make them universally sought; in a word, we would soon have a monopoly of American seed production.

To the average Texan devoted to cotton and corn raising, garden seeds may appear as a rather small business, though really it is not. But even supposing that it was, we have plenty of room for hosts of small things. There are chinks to be filled in between our great staples, and until they are filled by industries suitable for filling them, we cannot become "solid" so far as relates to a permanent prosperity.

Persons will be found ready to assure us that Northern grown seeds are invariably better than seeds grown at the South, though for the life of them they can't tell why. The impression has grown out of the fact that the North has pretty generally had the seed-growing business in the past and that, therefore, all advertising has been of Northern seeds. It is now a well-known fact, however, that Northern crops are more or less stunted or dwarfed by nature to bring them to maturity within a space of time naturally too short for them, and that, from this account, the seeds from them are those of crops less perfect than would be the same crops grown at the South where there is no crowding on the season. If, as the well-informed are claiming, seeds should be from the most perfect crops possible, we have the argument all on the side of Southern grown seeds, and a good deal of practical experience, already had, seems to be pretty well backing up the argument.

TO DESTROY ANTS.

Persons often apply to us for information that would enable them to destroy hills of the large stinging ant common in Texas and other Southern states. A hill or formentory is sometimes established in the immediate door-yard, and when once established is hard to break up. A bulletin of the Mississippi experiment station tells how to get rid of them by using bysulphide of carbon, to be had at the drug store. This is a volatile liquid the fumes of which are very destructive to animal life. It is furthermore an explosive substance, and for this reason should be handled with great caution. If kept away from fire, however, it may be used with entire safety, but a spark of fire would set it off, and an explosion would be the result.

In employing this substance as an ant destroyer, make a hole in the ant hill with a crowbar or suitable stick, and pour in a small quantity of the bisulphide. Fill the top of the hole and also that leading into the top of the formentory with earth, pressing it tightly. The fumes of the bisulphide thus confined will soon penetrate to the interior occupied by the ants and promptly destroy all of them.

THAT TIRADE AGAINST COTTON.

It makes us sick—this tirade against cotton production constantly on tap with many of the so-called agricultural papers of the South. Suppose we of the Southern states had never heard of cotton, and that it had suddenly dawned upon us that there was within our possibilities of production to perfection such a crop as the cotton crop—don't you know we'd all be "up in arms" and wild over it? We'd at once proclaim it the great Moses that was to lead us out of the wilderness. But now that it is here, and well understood, and known to be the greatest crop of the world secured to us by local conditions, as it were, we sit back, fold our hands and honor it after the traditional plan of honoring a prophet in his own country. This is all wrong, and the writer of agricultural literature for the South who opposes the production of cotton, and all the cotton it is possible for us to produce, is simply directing his efforts against the best interests of our section of country. Cotton is the very salvation of the Southern section of our common country. It gives us a special advantage over all other sections and over the entire face of the globe, for that matter. Other portions of the world may produce cotton, and do produce cotton, yet we really have the crop as a monopoly, owing to the fact that no other country can produce as good cotton as can the Southern United States of America. Our cotton always rides in on the top of the market, leaving the product of other parts of the world to get in at best it can after our supply has been exhausted. If we could produce enough of the staple to supply all countries of the civilized world incapable of producing cotton, no cotton would be produced anywhere else save possibly in small quantities for local consumption.

It is therefore our duty and to our interest to encourage cotton culture rather than throw cold water upon it, as many are doing. Cotton is simply a clear advantage peculiarly our own. We can raise most of the common products raised in the other states of the Union, and do it with as much profit as results to any of them from the same crops. If we confined ourselves to those crops we would have to compete against the whole country, but we have no competition in cotton and never can have.

Let us, therefore, encourage cotton culture in Texas. At present not one-tenth of our best cotton lands are devoted to the crop. Let us hope to see every acre of this land yielding a bale of the fleecy staple, after enough land has been put to other crops to give us our needed home provision supplies. There need be no fears of overproduction, provided we learn to produce at the lowest possible figures.

We hope it will be understood that we are referring to our best cotton lands only. We are not advocating the conversion of all Texas into one unbroken cotton plantation. We have immense areas of land well suited to cotton production, and immense areas of land better suited to the production of other crops. Our notion is that the land and other conditions best suited to the production of some particular crop should be specially devoted to that crop, and that there should appear no kind of opposition to such devotion. The stale plea of possible overproduction is childish, to say the least of it. While most persons let it pass, and appear to think there might be such a thing as overproduction, every man's actions prove that he don't believe a word of it. If a man believed that there was danger of overproduction why would he be so anxious to find, as a location, the most productive regions known, or to possess himself of the most productive lands to be had? With cheap production there can be no overproduction of any staple product.

THE COLLARD.

Mr. W. F. Massey of Raleigh, N. C., writes that while the collard is grown by near every kitchen gardener in the lower Southern states, there are some good things about it not, as yet, generally understood by those gardeners. The collard, he says, is a very hardy species of the cabbage family, enduring the summer heat and drouth, resisting the attacks of insects and standing out all winter better than any other cabbage. This we all know well enough. While tough in warm weather, he adds, the frosts of winter make it tender and delicious. This we know also. While not at all needing protection, he continues, there is a way of vastly improving it by bending it down to the ground in winter and covering it with soil, leaving only the tip sticking out. This bleaches it like celery and renders it the most delicious member of the cabbage family on the entire list. A few weeks of such covering makes its leaves entirely white and crisp, and as tender as a cauliflower. A collard that has been so covered becomes better than the finest cabbage. This is new to us and, in all probability, is new to most of our readers.

ON DEHORNING CALVES.

Mr. Waldo F. Brown, a noted Ohio cattle man, tells the Practical Farmer how he dehorns his cattle while they are yet very young calves. He uses caustic (stick) potash, and finds it safe, easy to apply and entirely effectual. You can get it at almost any drug store. A nickle's worth will dehorn a dozen calves. The time to make the application is when the calf is three or four weeks old, or when the horn can be felt like a little button just under the skin. Throw the calf down, for you can hold it much easier when it is on its side than if standing. You must be careful not to touch the potash with the fingers, but wrap it with a cloth to hold it by. It comes in sticks like a small crayon. Wet the hair over the horn about as large a spot as a nickle, and rub with the potash until it foams like soap. Half a minute over each horn is all that is needed, and in a few days you will find a black scab over the horn, and that will be the last of it. It hurts the calf a little and makes him squirm, but it makes no real sore and heals up and hairs over soon after the scab comes off.

SHALLOW CORN CULTURE.

The Farmer and Fruit-Grower says there are at least three good reasons for why all after-culture of corn should be shallow. First, if the seed bed has been properly prepared it should be let alone. It is a useless draft on the teams. Second, by deep culture you loosen up the seed bed, and in case of drouth it prevents the moisture from rising. Common sense teaches that the moisture could not so readily rise where the soil is loose, and it has to climb from one grain to another, each grain of earth drawing from the one below it. Third, and worst of all, is the breaking of the roots of corn. It is through these roots that the stalk receives its food. The stalk and root are dependent one upon the other for a living; destroy either and the other will die. Every man knows this.

OUR CORRESPONDENTS.

This department is devoted to answering such questions as may be asked by our subscribers, which may be of general information. Inquiries of personal character that require answer by mail should always have stamp inclosed. Please give full name and postoffice address in addition to any such signature as "Subscriber," or "A. G. D." not for publication, if against the will of the writer, but to admit of direct communication should such a thing be deemed necessary. Address as directed at head of this page.

BEETLES—BASKET WORMS—ROSES.

Enclosed find specimens of an insect taken from my wild goose plum trees. They are numerous on the wild goose, but I find them on no other species of plum.

The basket worm already described by you is among my worms, but I find little trouble from it. A sprinkling of the foliage with hardwood ashes appears to make very unpleasant conditions for the basket worm.

I am puzzled over a failure of many of my roses to fully develop their buds. The bushes seem to be strong and healthy. I can attribute it only to an over abundance of blooms, as I find nothing else so far as I have been able to investigate. Should I get at the cause will let you know what I have found. J. C. Martin.

Fort Worth, Tex.

The insects sent are small beetles of the "ladybird" family. Length, about one-eighth of an inch; width, about one-tenth of an inch; shape, somewhat like a grain of coffee; color, a dirty, orange red, marked with many black dots over the back.

This species is peculiarly Southern, though it is occasionally met with as far north as Illinois. Its scientific name is Hippodamia convergens. Classes with our most useful insects, as it feeds entirely upon other insects, and never at all interferes with vegetation. A close examination of your wild goose plum trees would be apt to reveal the fact that there were plant lice upon it, and that the ladybirds were there engaged in the business of devouring them. It is an insect that should ever be encouraged by the horticulturist.

Your ashes remedy for the basket worm is evidently a good one, especially while the worms are yet young and walking over the smooth surface of the leaves. The ashes should be sprinkled over the plants while the dew is on. It is probable that slacked lime or almost any other fine, powdery substance would be more or less effectual. It would damage the ability of the insect to maintain its hold on the leaf.

Your notion relative to the trouble with your roses is no doubt correct—they are overbearing themselves. In other words, they are putting forth more buds than their available plant food will enable them to sustain. For best development the rose needs extremely rich soil. The late Col. C. C. Langdon, of the celebrated Langdon nurseries, Mobile, Ala., used to say: "Always give your roses all the manure you can possibly get and then add one more wheelbarrow load to each hill." Col. Langdon was a high authority on roses.

Your remedy, then, is clearly mapped out—add a wheelbarrow load of well-decomposed stable manure to each bush, working it down among the roots without breaking them.

BERBERIS FREMONTII, ETC.

Has the barberry mentioned by Professor Hill (Berberis fremontii), any botanical relationship to the holly?

Where is the American Geologist published? B. Lodge.

Lampasas, Tex.

The barberry family of plants is in no way related to the holly family—they are far apart in natural characteristics. The barberry, as you know, is a Berberis, while the holly is an Ilex. There are many species in each family or genera. The leading species in barberries is Berberis canadensis, perhaps, while that in the hollies of this country is Ilex opaca. We have a very pretty little barberry growing among the hills and mountains throughout Texas and most generally known by the Mexican name of "algireda." It is the Berberis trifoliolata of botanists, and is very closely related to the fremontii species.

Holly and barberry have no resemblance save in the fact that the leaves of each are rigid and armed with sharp spines. The leaf of the barberry is in three parts (trifoliate), however, while that of the holly is entire.

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WHAT IS LONDON PURPLE?

Your article of last week telling all about how to poison the cotton worm was worth a dozen prices of subscription to The Gazette to every cotton planter in Texas. You appear to speak quite favorably of London purple as a worm destroyer—what is London purple? I have heard of it often but do not know what manner of substance it is. Paris green, I know, is an arsenite of copper, and of course everybody knows what arsenic is. T. T. F.

Waco, Tex.

London purple is an arsenite of lime prepared from the waste of gas works, or rather from the waste left in the manufacture of analine dyes, which are made from waste of the gas works. Until London purple was made from this waste it was an entire waste, sure enough. Being, therefore, made of a waste carrying no other value, London purple is a very cheap substance. It contains a smaller per cent of arsenic than does Paris green, but many consider it equally as good for poisoning insects.

OUR SLOVEN FARMER.

I am from Illinois, and during the few months that I have been in Texas I have ranged about pretty freely among Texas farmers. I have met with some really good farmers and some—well, up in my country they would be called slovens. Some of them are dairymen on a small scale, and the women folks have to do all the milking! The girls, daughters(!) of the farmers, do it. When the cows are fed it is in old half barrels all around the lot, and the most greedy cows get the lion's share of the feed, while the slow eaters and poor fighters never get enough. As a result these last don't give much milk, and the farmer sells them the first opportunity simply because his other cows have eaten too much of the food.

These girls who do the milking have a hard time of it. "So-o-o Brindle!" But Brindle, having concluded that a weaker cow has a grain more of salt in her'n, runs there through the mud. And the girls must run and splatter through the mud after her, becoming as muddy as the cows. It would be a regular circus for the people up in Illinois, would that milking performance. No wonder the young folks become disgusted with the farm. Sucker.

Denison, Tex.

Our correspondent does not say what portion of Illinois he is from, but we'd be willing to wager all our loose change that he is not from that southern portion of the state known as "Egypt." What he so graphically describes would be no circus to the average Illinois Egyptian. It would make him feel entirely at home all the time.

It is highly probable that some of us Texans are a little slovenly in some things we do, but you would find most of us rather apt scholars and entirely willing to learn. Suppose then, that you settle down in Texas and lay a pattern for us to follow, by doing things a little better than we are doing them. You might, by pursuing such a course, accomplish great good both to yourself and your benighted neighbors.

THE BORDEAUX MIXTURE.

I have read in the papers about Bordeaux mixture, used for spraying trees and vines to prevent leaf blight and grape rot. It appears to be the chief standby at present for all manner of fungus plant diseases. Can you tell me what it is, and how to prepare it? Trinity.

Tarrant county, Tex.

To make Bordeaux mixture dissolve twelve pounds powdered sulphate of copper (blue-stone) in twenty gallons of water, using a forty-five gallon barrel for the purpose. In another vessel stir eight pounds of unslacked lime into twelve gallons of water and then strain through a coarse cloth into the copper solution. Next fill the barrel with water and stir thoroughly. This is the Bordeaux mixture. It is applied by spraying finely over the trees, vines or plants to be treated.

If you should not need so much Bordeaux mixture as our formula gives you can reduce the quantity at pleasure by adhering to the foregoing proportions.

DESCRIBING SWISS CATTLE.

I have read a good deal of late concerning Swiss cattle. The strain is represented to be a new and very desirable one. Can you give me some information through The Gazette with reference to these new Swiss cattle? Small Stockman.

Weatherford, Texas.

The so-called new Swiss cattle are nothing new, though some one is probably attempting to boom them up as such. They are very good cattle, however, and we think it highly probable that they would do first-rate in Texas. As yet they seem to be confined, for this country, mainly to Massachusetts, where an association breeding them has put out a "record" and "herd book." The cattle are said to be fine milkers and good beef producers. They are of good size, extremely gentle and unusually hardy.

The herd book spoken of has them down as "brown Swiss cattle." How the "brown" is made to apply we are unable to explain, for the cattle are not brown at all, but mouse-colored. The nearer the conformity to mouse-color the more likely is it that the stock is pure. They are round and plump in form, with a straight back and smooth hair. Eyes, deep black; horns, black at point but white and smooth back to the head; ears, large and lined with an abundance of cream-colored hair; neck, short and powerful; chest, broad and deep; head, finely shaped, with black muzzle; tongue, very black and rough; udder, large, well shaped and white, with milk veins very prominent; weight of an adult cow in good condition about 1400 pounds.

We have not been able to find any data with reference to the origin and early history of the brown Swiss cattle. As the name would seem to apply, they were imported to this country from Switzerland. We find them mentioned in the Switzerland consular reports as fine stock for the dairy and for beef.

THAT FLORIDA STEAM PUMP.

In Sunday's Gazette of May 17 I find an article headed "Something on Irrigation." It deeply interested several of us, and I have been requested to ask you to give us the name of the pump mentioned, and also let us know where it is manufactured, if possible. We are anxious to get further information with reference to the matter, and any such information you might be able to furnish us would be thankfully received. If it involves any cost please let us know and we will be prompt. Henry Bier.

Gainesville, Tex.

Several letters on this same subject have be received by us and we take this method of making a sweeping reply to all. The receipt of the letters has afforded us much pleasure, for they seem to indicate that our people are interesting themselves in irrigation for Texas.

As stated in our article referred to, we know nothing whatever about the vacuum pump employed by Judge Speer, beyond what was then published. Our article was based on one appearing in the Florida Agriculturist of DeLand, Fla. We think it highly probable that parties concerned might get themselves put upon the right track by addressing Judge Speer, Oakland, Orange county, Fla. The judge (who, by the way, has been figuring quite extensively as a candidate for senator, of late), is a courteous and obliging gentleman, and would, no doubt, take pleasure in doing anything he could for us people of Texas.

A HEN GETS THE JIM-JAMS.

You may look upon the inquiry I am going to make as something very foolish, nevertheless it relates to a matter in which I am specially interested just now. What do you regard as the best means of breaking a "broody" hen from persistent "setting?" In my small poultry experience of this season I have been much annoyed by my hens getting in the way of "setting," with a determination to keep at it though the heavens fall. I take all the eggs from the nest, but that makes no kind of difference with the hen—she "sets" right along all the same. I destroy the nest and pile goods boxes over the place, but she locates an addition as near the old plat as possible and goes on in her "setting" with apparently as much satisfaction as if nothing unusual had happened. If I shut her up in a barrel and place a grindstone atop of it, she looks up at me through the hole in the grindstone with a twinkle in her eye which plainly tells that "setting" in a barrel suits her just as well as "setting" anywhere else. I think she invariably intends to fight it out on that line if it takes all summer. Please answer through The Gazette and much oblige. One Disgusted.

Fort Worth, Tex.

Some folks recommend tying a red flannel rag to the tail of the hen to instill into her such a roving disposition as shall leave her with no time on her hands for devoting to long staying at one place; others recommend shutting her up in a barrel with two inches of water on the bottom to make her tired of sitting in consequence of being thus forced, for comfort's sake, to do her sitting standing, while still others suggest that the best means of breaking up a persistent "setter" is to break her neck with the edge of a hatchet. For our own part we stand aloof from each and every one of these popular recommendations by merely passing them out at second hand to go for what they are worth.

The only method of effectually and permanently breaking up a persistent "setter" that we could look upon with entire favor was discovered by a Florida man some two years ago. In a swamp near by he found an alligator's nest containing six eggs which he took home. There was in the orange shed a hen "setting" on a brick-bat after the manner of our correspondent's hen, so he concluded to give her a real job by placing the six eggs under her. It was "all in clover" for the hen.

Now, it so happened that the alligator eggs were near the hatching period. Late the next evening the gentleman heard a fearful "cralking" and cackling coming from the hen in the orange shed, and suggesting the discovery of a snake. Arming himself with the garden rake, he hastened to the rescue, but it proved to be no snake. Three of the young alligators were out, crawling about the nest and apparently speculating on how far it might be to the edge of the swamp. He removed the hatch, leaving the three unhatched eggs still under the hen. Just at daylight next morning he was astonished to see the hen come from the orange shed with a racket that fairly roused the neighborhood, and make directly for the nearest woods. Going to the shed he found three new alligators in the nest.

Two years have since elapsed, and though that hen has taken high rank as the best layer on the place, she has never up to this day, evinced the slightest disposition to "set." The gentleman thinks she must have concluded that her prolonged impudence had brought on an attack of the jim-jams, and that, therefore, it was time to begin a permanent reform. The method is probably entirely open to all who may desire to employ it—if the gentleman ever took out letters patent on his discovery we are not aware of the fact.

TROUBLE AMONG THE ROSES.

Herewith I send you some rose buds. My bushes of white and yellow roses are full of buds, but all are blighted like the specimens sent. Please give me through The Gazette some remedy for this trouble. The bushes all appear healthy, and are growing vigorously, but they develop no perfect flowers. G. I. Hudson.

Mineola, Tex.

The roses, which are of the large double varieties, appear to have attained to full maturity, and the buds to have opened, throwing back the calyx in the regular way, but the petals have not expanded. The sutercorolla wraps the flower up in a dry covering reminding one somewhat of the wrapper around a cigar, both in point of color and general appearance. Inside of this wrapper the petals appear fresh and good, but they have no fragrance. The base of the petals at their union with the calyx are dead and decaying, separating easily and allowing the center to pull out with the stem.

A fungus growth of some kind is working this trouble evidently, though we are unable to make out exactly what it is. A thorough spraying with the Bordeaux mixture described above would probably prove the best remedy that could be applied.

POPULAR SCIENCE.

HAVE WE PHOSPHATE CHALKS IN TEXAS?

A Rich Find in England—The March of Science—Mind Reading Clouded—Long Telephone Lines—House Telephoning—When to and Not to Eat.

Quite an interest has lately been roused in England over the discovery of rich phosphate chalks at Taplow. Of course chalks have long been known to exist there but till of late no one thought of them as particularly phosphatic. On learning of the discovery Mr. Strahan was sent out by the director-general of the geological survey to investigate. He reports that farmers of that region have long been spreading chalks upon their lands, finding them highly beneficial, though they had no kind of idea why they were beneficial. He found the chalks very rich in phosphates—fully as rich, we infer, as are our best phosphate rocks of South Carolina.

We have a very large chalk area in Texas. As yet our chalks have never been examined with any particular thought of a phosphatic character. Who can now say that we have not immense beds of rich phosphatic chalks here? A remark once made to us by Professor Robert T. Hill leads us to rather suspect it. We were in a deep railroad cut where the chalk strata were well exposed, and pointing to the thin earthy deposits between the chalk strata, he stated that they were really very rich marls.

Phosphatic chalks are not new to the world by any means, but this discovery is something entirely new for England. Had the English geologists have been looking after the phosphatic character of the chalks it is entirely more than probable that this discovery would have been made long ago. Just so it has been in our case—our geologists studying the cretaceous of Texas have not been looking for phosphates. One can not be surprised at anything that turns up in Texas. With our immense chalk area there would be no very good grounds for supposing that we may not have in it rich phosphate deposits of sufficient magnitude to enable us to supply all agricultural America with phosphoric acid. The thing is certainly worthy of especial search at the hands of our scientists.

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Professor Stubbs of Louisiana says science has made rapid strides within the past fifty years. Its progress is onward. With undaunted mein it boldly invades the great arcana of life, and seeks, without irreverance, to learn those principles by which plants grow and produce food for man and beast. In spite of ignorance and prejudice its efforts have been partially successful, and its devotes, trusting to a continuance of the progress of human discovery, lose none of their energies in attaining this great aim.

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We have many people who believe that there is such a thing as mind reading—one person takes hold of another person's hand and thereupon is able to read everything passing through the mind of the person whose hand is held. After a long and careful investigation of the matter Dr. Charles Gatchell writes through the Forum for April that the whole thing is a humbug—the work of self-styled conjurers and true mountebanks.

A telephone line is now in successful operation between London and Paris, a distance of 297 miles, twenty-three miles of which is by cable, laid under the British Channel. The only trouble about the line lies in its want of capacity to accommodate all the patronage offered. The people managing the concern say they could keep ten similar lines constantly at work. The present charge is $2 for a talk of three minutes.

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Everything would seem to indicate that long telephone lines are soon to come into quite general use. The Scientific American reports the successful working of an experiment between New York and Cleveland, Ohio, a distance of 650 miles. The advantage of the telephone over the tele-